

CLAIMS

WE CLAIM:

5 1. A system for processing biosolids from a sludge pond into fertilizer comprising:

(a) a portable dewatering system for removing liquid from sludge, said portable dewatering system having:

a collection device for collecting sludge from said sludge pond;

10 a centrifuge for removing liquids from said sludge collected by said collection device to create a biosolids composition; and

a transfer device to transfer said biosolids composition from said centrifuge;

15 (b) a transport vehicle for receiving said biosolids composition from said transport device, said transport vehicle transporting said biosolids from said sludge pond to a fixed processing plant; and

(c) the fixed processing plant having:

a mixer for mixing a stabilizing agent with said biosolids composition to create mixed biosolids;

20 a heating and sterilising system to heat and sterilize the mixed biosolids and for extruding sterilized pellets; and

a drying system for drying the pellets,
wherein said pellets can be used as fertilizer.

25 2. The system of claim 1, wherein said portable dewatering system is mounted on a truck.

3. The system of claim 1, wherein said collection device is a pump.

30 4. The system of claim 1, wherein said collection device is a dredge.

5. The system of claim 3, wherein said transfer device is a conveyor.

6. The system of claim 5, wherein said portable dewatering system, further comprising a generator to power said pump, centrifuge and conveyor.

7. The system of claim 6, wherein said portable dewatering system further comprises a holding tank for holding sludge collected by said pump.

8. The system of claim 7, wherein said portable dewatering system further comprising a step screen between said holding tank and said centrifuge to remove debris from said sludge.

9. The system of claim 8, wherein said step screen includes an auger drive.

10. The system of claim 1, wherein said biosolids composition includes 25% solids.

11. The system of claim 1, wherein said heating and sterilizing system is a microwave extruder.

12. The system of claim 11, wherein said microwave extruder includes:
a loading hopper for receiving mixed biosolids;
an extruder screw for conveying mixed biosolids from said loading hopper;
a microwave source for heating said mixed biosolids along said extruder screw.

13. The system of claim 12, wherein said processing plant further includes an ultraviolet treatment device for treating said mixed biosolids.

14. The system of claim 13, wherein said processing plant further includes an ammonia recovery device to recover ammonia from said mixed biosolids.

15. A portable dewatering system for removing biosolids from a sludge pond, said dewatering system comprising:

a collection device to collect sludge from the sludge pond;
a holding tank for the sludge collected by said collection device;
a centrifuge to dewater sludge from said holding tank, said centrifuge creating
a liquid and a biosolids composition; and
5 a transport device to remove said biosolids composition from said centrifuge.

16. The portable dewatering system of claim 15, wherein said system is mounted
on a truck.

10 17. The portable dewatering system of claim 16, wherein said collection device is
a pump.

18. The portable dewatering system of claim 16, wherein said collection device is
a dredge.

15 19. The portable dewatering system of claim 17, wherein said transport device is
a conveyor.

20 20. The portable dewatering system of claim 19, further comprising a generator to
power said pump, centrifuge and conveyor.

21. The portable dewatering system of claim 20, further comprising a step screen
between said holding tank and said centrifuge to remove debris from said sludge.

25 22. The portable dewatering system of claim 21, wherein said step screen
includes an auger drive.

23. The portable dewatering system of claim 15, wherein said biosolids
composition includes 25% solids.

24. A microwave extruder for treating biosolids comprising:
a loading hopper for receiving biosolids;
an extruder screw for conveying biosolids from said loading hopper;
a microwave source for heating said biosolids along said extruder
5 screw.

25. The microwave extruder of claim 24 further comprising a motor to power said extruder screw.

10 26. The microwave extruder of claim 25 further comprising sensors along said extruder screw to sense the temperature of said biosolids along said extruder screw.

27. The microwave extruder of claim 26, wherein said microwave source can irradiate said biosolids with different intensity along said extruder screw.

15 28. The microwave extruder of claim 27, wherein said microwave source is adjustable based on readings from said sensors.